

Understand independence and conditional probability and use them to interpret data (Standards S.CP.1, 4–5).	
Standard II.S.CP.1: Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”).	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Use correct set notation, with appropriate symbols and words, to identify sets and subsets within a sample space. • Identify an event as a subset of a set of outcomes (a sample space). • Draw Venn diagrams and two-way tables that show relationships (unions, intersections, or complements) between sets within a sample space. 	
Related Standards: Current Course	Related Standards: Future Courses
II.S.ID.5 , II.S.CP.4 , II.S.CP.5 , II.S.CP.6 , (IIH.S.CP.2, IIH.S.CP.3)	III.S.IC.6 , AP Statistics

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Represent sample spaces (7.SP.8) • Construct and interpret frequencies and relative frequencies in a two-way table (8.SP.4)
Academic Vocabulary
sample space, subset, outcome, union, intersection, complement, \cup , \cap ; A^c , A' , $-A$, \bar{A} (Note: Various notations are commonly used for complement.)
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5620#71517

Understand independence and conditional probability and use them to interpret data (Standards S.CP.1, 4–5).	
Standard II.S.CP.4: Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. <i>For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.</i>	
Concepts and Skills to Master <ul style="list-style-type: none"> Construct and interpret two-way frequency tables, identifying the associations between categories. Recognize that the conditional probability, $P(A B)$ represents the joint probability for A and B divided by the marginal probability of B. This association can be obtained from the two-way table. Given a two-way table, decide if events are independent based on conditional probability (if A and B are independent, then $P(A) = P(A B)$) 	
Related Standards: Current Course	Related Standards: Future Courses
II.S.ID.5 , II.S.CP.5 , II.S.CP.6 , (IIH.S.CP.2, IIH.S.CP.3)	III.S.IC.6 , AP Statistics

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> Construct and interpret frequencies and relative frequencies in a two-way table (8.SP.4) Find probabilities of compound events from two way tables (7.SP.8) Calculate relative frequency (7.SP.6)
Academic Vocabulary
conditional, independence, joint probability ($P(A \cap B)$), conditional probability ($P(A B)$), marginal probability ($P(A)$ or $P(B)$)
Resources
Curriculum Resources: http://www.uen.org/core/core.do?courseNum=5620#71517

Understand independence and conditional probability and use them to interpret data (Standards S.CP.1, 4–5).	
Standard S.CP.5: Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. (For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.)	
Concepts and Skills to Master	
<ul style="list-style-type: none"> Interpret conditional probabilities and independence and explain in context. 	
Related Standards: Current Course	Related Standards: Future Courses
II.S.CP.1 , II.S.CP.4 , II.S.CP.6 , (IIH.S.CP.2, IIH.S.CP.3)	III.S.IC.6 , AP Statistics

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> Summarize categorical data in a variety of ways. (II.S.ID.5) Find probabilities of events (7.SP.7) Understand and calculate conditional probabilities (II.S.CP.4) Understand independence. (II.S.CP.4)
Academic Vocabulary
conditional probability, independence
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5620#71517

Use the rules of probability to compute probabilities of compound events in a uniform probability model (Standard S.CP.6).	
Standard II.S.CP.6: Find the conditional probability of A given B as the fraction of B 's outcomes that also belong to A , and interpret the answer in terms of the model.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> Find and interpret conditional probabilities using different representations (such as a two-way table, Venn diagram, or tree diagram) and explain in context. 	
Related Standards: Current Course	Related Standards: Future Courses
II.S.CP.1 , II.S.CP.4 , II.S.CP.6 , (IIH.S.CP.2, IIH.S.CP.3)	III.S.IC.6 , AP Statistics

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> Summarize categorical data in two-way frequency tables. (II.S.ID.5) Understand and calculate conditional probabilities (II.S.CP.4) Find probabilities of events (7.SP.7) Design and use a simulation to generate frequencies for compound events (7.SP.8)
Academic Vocabulary
random variable, probability model
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5620#71517